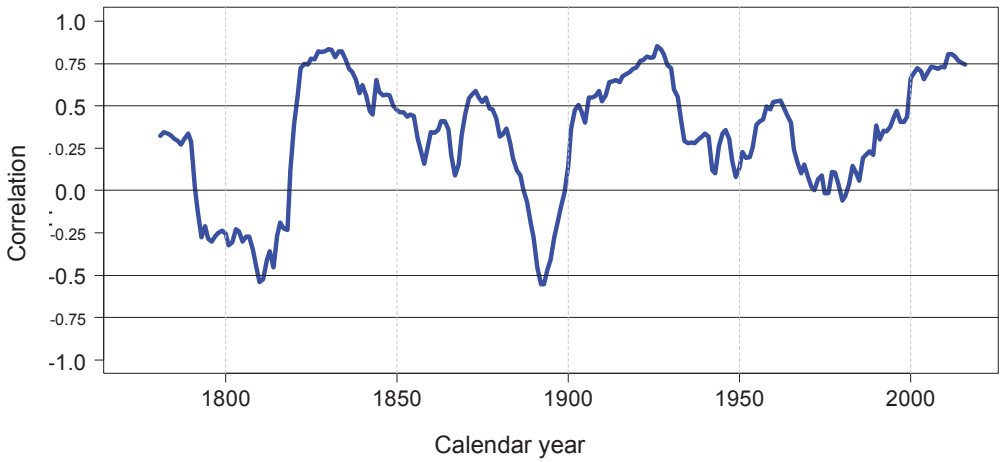

Fig. 2. The moving correlation between "Shore" and "Control" chronologies (the size of the moving window is 20 years).

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EXTINCTION AND RECOVERY OF NON-MARINE BIVALVES FROM THE MIDDLE AND UPPER PERMIAN LAKE DEPOSITS OF THE SEVERNAYA DVINA RIVER BASIN

Urazaeva M. N.

Kazan (Volga Region) Federal University, Russia

More than 20 non-marine bivalves' localities are known from the Middle and Upper Permian continental (lake) deposits of the Severnaya Dvina River Basin (north-west part of the East-European Platform) (Plotnikov, 1945, 1949; Gusev, 1955, 1963, 1977, 1990; Kanev, 1986; Betekhtina and Tokareva, 1988). Revision of the systematics of the Permian non-marine bivalves from this area has been performed by the author in 2014-2018 and has allowed specifying their diversity (35 species, 9 genera, 5 families, 4 superfamilies, 1 subfamily and 3 orders).

Remains of non-marine bivalves are represented by shells, internal and composite molds, and imprints. Usually, separate bivalve valves located parallel or subparallel to the bedding planes.

Four phases of extinction and recovery are established in the evolution of Permian non-marine bivalve fauna from continental deposits of the Severnaya Dvina River Basin. The definition of the phases is based on:

– analysis of taxonomic diversity of non-marine bivalves (number of genera and species, maximum diversity);

– analysis of the paleobiogeographical structure of the non-marine bivalves assemblages, including interrelations of autochthonous, cosmopolitan and endemic genera, and allochthonous migrant genera.

The Late Urzhumian-Early Severodvinian phase is characterized by a predominance of Angarian genus *Prilukiella*. Cosmopolitan subgenus *Palaeomutela* (*Palaeomutela*) has a subordinate significance.

Late Severodvinian phase differs by the predominance of cosmopolitan genus *Palaeomutel*a sensu lato. Representatives of endemic genus *Opokiella* appears in the beginning of this phase.

Terminal Severodvinian-Early Vyatkian phase is characterized by increasing of endemic genera and appearance of rare representatives of Angarian genus *Concinella*.

Cosmopolitan genus *Palaeomutela* sensu lato has predominant significance during the Late Vyatkian phase. The number of endemic genera decreases in this phase.

It is assumed that disappearance of Angarian non-marine bivalves is correlated to relative warming as evidenced by the general direction of the positive excursions of carbon and oxygen isotopes on the isotope curves (Arefiev et., 2015).

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